

StorCase® Technology
Data Express®
SerialATA DE110

Removable
SATA Drive Enclosure

User's Guide

StorCase® Technology

**Data Express®
Serial ATA DE110**

*Removable
SATA Drive Enclosure*

User's Guide

Part No. D89-0000-0217 A03 November 2004

Kingston Technology Affiliate



**StorCase Technology, Inc.
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Phone (714) 438-1850 Fax (714) 438-1847**

LIMITED WARRANTY

STORCASE TECHNOLOGY, Incorporated (“StorCase”) warrants that its products will be free from defects in material and workmanship, subject to the conditions and limitations set forth below. StorCase will, at its option, either repair or replace any part of its product that proves defective by reason of improper workmanship or materials. Repair parts or replacement products will be provided by StorCase on an exchange basis, and will be either new or reconditioned to be functionally equivalent to new.

This warranty does not cover any product damage that results from accident, abuse, misuse, natural or personal disaster, external power surge or failure, or any unauthorized disassembly, repair or modification. StorCase will not be responsible for any software, firmware or other customer data stored within, or interfacing with a StorCase product.

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Seven-Year Warranty: The following StorCase products are covered by this warranty for a period of seven (7) years from the original date of purchase from StorCase or its authorized resellers: all Data Express[®] removable device enclosures and all Data Silo[®], Data Stacker[®] and InfoStation[®] external expansion chassis, except for those components integrated into or purchased separately for use with these products which are identified and covered by the three-year or hard drive warranties described below. All StorCase interface cables and other accessories specifically intended for use with the StorCase products identified above are also covered by this (7) year warranty.

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For defective products returned directly to StorCase, a Return Material Authorization ("RMA") number must be obtained by calling StorCase Customer Service at (714) 445-3455. The RMA number must be prominently displayed on the outside of the return package. Shipments must be freight-prepaid and insured, and must include the product serial number, a detailed description of the problem experienced, and proof of the original retail purchase date. Products must be properly packaged to prevent damage in transit. Damage resulting from improper packaging will not be covered by this warranty. The StorCase factory service center is located at 17650 Newhope Street, Receiving Dock, Gate #4, Fountain Valley, CA 92780, U.S.A.

Free Technical Support

StorCase provides free technical support. If you experience any difficulty during the installation or subsequent use of a StorCase product, please contact StorCase's Technical Support Department prior to servicing your system. This warranty covers only repair or replacement of defective StorCase products, as described above. StorCase is not liable for, and does not cover under warranty, any costs associated with servicing and/or installation of StorCase products.

StorCase Technical Support can be reached in the U.S. at (714) 438-1858 or toll-free at (888) 435-5460 (U.S. and Canada only). StorCase European Technical Support can be reached in the U.K. at +44 (0) 1932 738900.

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Declaration of Conformity

Company Name: StorCase Technology, Inc.

Corporate Office Address: 17600 Newhope Street
Fountain Valley, CA 92708

Manufacturing Address: 17600 Newhope Street
Fountain Valley, CA 92708

Product Name: Data Express SATA DE110

Model Number: S21B102, S21B105, S21J100, S21J101, S21J102,
S21J103, S21J104, S21J105, S21J106, S21J107

Conforms to the following standards:

EMC Directives: ITE Emission
(89/336/EEC) - EN55022: 1998
EN 55024: 1998 ITE Immunity
- IEC 61000-4-2 - IEC 61000-4-8
- IEC 61000-4-3
- IEC 61000-4-4
- IEC 61000-4-6

Safety Standards: CAN/CSA-C22.2 No. 950-95
CSA (NRTL/C) UL 1950

TUV EN 60950: 2000

EMI Standards: FCC Part 15, Class B

EMC Standards: AS/NZS 3548 Information Technology Equipment
Supplier's Code Number N10664

Year of Manufacture: 2003

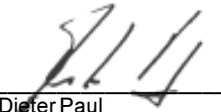
Signature: 
Full name: Dieter Paul
Position: President

Table of Contents

INTRODUCTION	1
Packaging Information	1
Serial Numbers	1
Package Contents	2
General Description	3
"Universal" Receiving Frame Front Panel	4
SATA Drive Carrier	6
Receiving Frame Rear Panel	7
INSTALLATION	8
Preparation	8
Installing the Drive into the Carrier	8
Installing the "Universal" Receiving Frame	11
Spacer Plates (Optional)	12
Selecting the Unit ID Number	13
Unit ID Select Switch Settings	14
APPENDICES	15
Appendix A - Specifications/Dimensions	16
Appendix B - Optional Accessories	18
Carrying Case	18
Reader's Comments	19

List of Figures

Figure 1:	Package Contents	2
Figure 2:	SATA DE110 "Universal" Receiving Frame and Carrier	3
Figure 3A:	"Universal" Receiving Frame Front Panel	5
Figure 3B:	"Universal" Receiving Frame Unit ID Number and Activity Display	5
Figure 4:	SATA Drive Carrier	6
Figure 5:	Receiving Frame Motherboard (Rear View)	7
Figure 6:	Drive Installation Assembly	8
Figure 7:	Drive Cover Installation	10
Figure 8A:	Receiving Frame Mounting Holes	11
Figure 8B:	Spacer Plate Installation (Optional)	12
Figure 9:	Unit ID Select Switch Location	14
Figure A-1:	SATA DE110 Physical Dimensions	17
Figure B-1:	Carrying Case	18

List of Tables

Table 1:	Unit ID Select Switch Settings	14
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NOTICE: This User's Guide is subject to periodic updates without notice. While reasonable efforts have been made to ensure the accuracy of this document, StorCase Technology, Inc. assumes no liability resulting from errors or omissions in this publication, or from the use of the information contained herein.

Please check the StorCase web site at <http://www.storcase.com> or contact your StorCase representative for the latest revision of this document.

INTRODUCTION

Packaging Information

The StorCase Technology Data Express® system is shipped in a container designed to provide protection and prevent damage during shipment. The Data Express unit was carefully inspected before and during the packing procedure at the factory. Bent or broken connectors, or evidence of other damage to the Data Express should be reported to the shipper immediately. Refer to Figure 1 for the package contents.

If the wrong Data Express model has been received, please call your reseller or StorCase at (800) 435-0642 to arrange for a Return Material Authorization (RMA). StorCase cannot accept returns which do not display an RMA number on the outside of the package. Return the unit with all the original packing materials.

Before removing any component from its packaging, discharge any static electricity by touching a properly grounded metal object.

Serial Numbers

Both the SATA DE110 receiving frame and carrier are labeled with serial numbers. These numbers must be reported to the StorCase Customer Service Representative in order to receive a Return Material Authorization (RMA) for warranty claims. Locate the serial number labels and record the numbers in the spaces provided below.

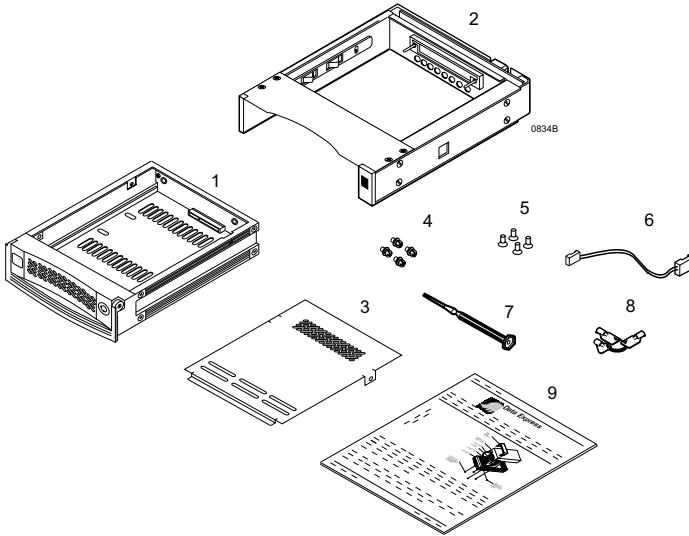
Receiving Frame:

Device Carrier:

Package Contents

NOTE: Package contents may vary, depending on model.

The SATA DE110 package contents include the following items. If any item is missing or damaged, contact your StorCase dealer for a replacement.



One Data Express Serial ATA Removable Enclosure	Carrier & Rec. Frame	Carrier Only	Rec. Frame Only
1. Drive Carrier	1	1	
2. "Universal" Receiving Frame	1		1
3. Drive Cover	1	1	
4. #6-32 Phillips Machine Hd. Screws	4		4
5. #6-32 Phillips Flat Hd. Screws	4	4	
6. Activity Indicator Cable	1	1	
7. Alignment Tool	1		1
8. Drive Lock Keys	1 Set	1 Set	
9. Insert Sheet	1	1	1

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Figure 1: Package Contents

General Description

NOTES: Existing Parallel ATA DE110 carriers and new Serial ATA DE110 carriers will both work in Serial ATA "universal" receiving frames. "Universal" receiving frames are indicated by their BLUE LED. Existing DE110 carriers are indicated by a Data Express Logo, while the new Serial ATA DE110 carriers are indicated by the Serial ATA logo.

SATA DE110 carriers will *only* work in SATA DE110 "universal" receiving frames (indicated by their BLUE LED). Existing PATA DE110 receiving frames are indicated by their GREEN LED.

For SATA (1.5Gbps) operation, a SATA controller and appropriate SATA cable are required.

The StorCase Technology **Data Express® Serial ATA DE110** is a removable drive carrier and "universal" receiving frame, designed to provide durable and reliable mounting for one (1) low-profile (up to 1" high) 3.5" SATA drive within a 5.25" half-height peripheral slot (Figure 2).

The SATA DE110 allows a drive to be removed and transported to another SATA DE110-equipped computer or expansion chassis, and also provides the ability to secure sensitive data by removing and storing the drive safely for future use.

The SATA DE110 is the first removable drive enclosure for SATA host interfaces to provide compatibility with both SATA and PATA drives. The SATA DE110 incorporates a unique "universal" receiving frame (patent pending), capable of use with either a SATA or PATA DE110 drive carrier!

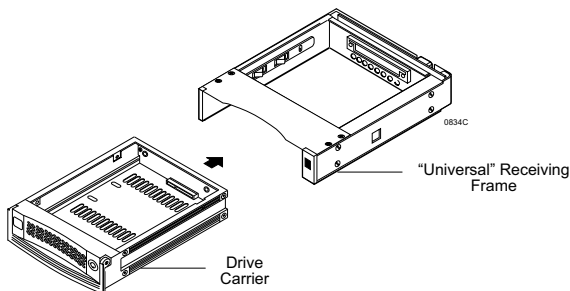


Figure 2: SATA DE110 "Universal" Receiving Frame and Carrier

This User's Guide describes the steps required to install the SATA DE110 removable enclosure inside a computer peripheral bay or external expansion chassis. This guide supplements documentation provided with the host computer system, operating system, and the drive to be installed within the carrier.

"Universal" Receiving Frame Front Panel

(Figures 3A & 3B)

- **Unit ID Number Indicator** - This BLUE LED displays the status of the SATA DE110 device carrier if the carrier is *Installed and Locked* in the receiving frame *or* if the carrier is *removed* from the receiving frame. If the carrier is *Installed but not Locked* in the receiving frame, a "u" will be displayed to indicate an unlocked condition. The unit ID number is selected by means of the unit ID select switch inside the receiving frame using a special alignment tool supplied with the SATA DE110 (Figure 9).
- **The Activity Indicator** - A small BLUE dot next to the unit ID number illuminates to indicate when the host computer is accessing the data on the SATA DE110 carrier. This dot will flash during communication with the host computer.

Some SATA drives/host controllers provide support for the Activity Indicator feature (refer to the SATA drive/host controller manufacturer's documentation for further information). There are one of two ways to utilize the Activity Indicator:

1. Drive connection (cable included) to JP1 located on Drive Carrier Board (Figure 4).

or

2. Host connection (cable not included) to J2 Pin 13 located on Receiving Frame Motherboard (Figure 5).

Use one method only. Refer to the SATA drive/host controller manufacturer's documentation for further information.

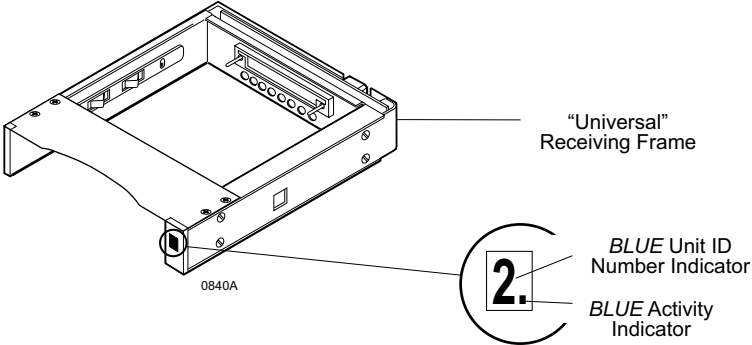
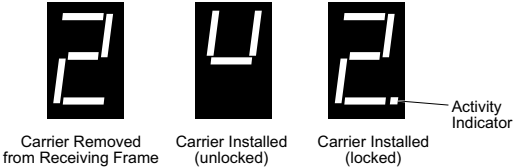


Figure 3A: "Universal" Receiving Frame Front Panel



The number "2" shown above is for illustration purposes only. The letter "u" (above middle) will appear as illustrated.

0064E

Figure 3B: "Universal" Receiving Frame Unit ID Number and Activity Display

SATA Drive Carrier

(Figure 4)

- **Key Lock/Drive Power Switch** - Performs three functions. The key switch assures proper seating of the drive carrier within the receiving frame, turns power to the drive carrier ON and OFF, and prevents unauthorized removal or installation of the carrier. For the computer to access data on the disk drive, the key must be turned counterclockwise to the locked position.
- **JP1** -Provides a signal to the Activity Indicator (Figures 3A & 3B) when connected via cable (provided) to the SATA drive. Some SATA drives/host controllers provide support for the Activity Indicator feature (refer to the Serial ATA drive/host controller manufacturer's documentation for further information).

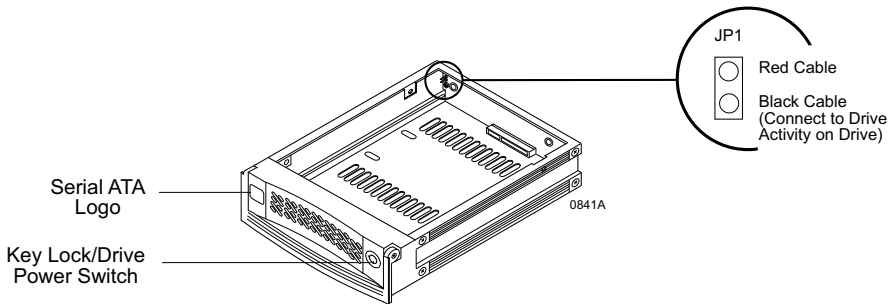


Figure 4: SATA Drive Carrier

"Universal" Receiving Frame Rear Panel

(Figure 5)

- **I/O Connector (JP1)** - The input/output connector provides a standard interface for all SATA signals (Figure 5).
- **DC Power Connector (P1)** - A standard 4-pin DC power connector is used to accept DC power.
- **Option Pins (W1)**
Factory-Installed Jumper (ID0 & ID1) - Factory-installed jumper. Refer to Table 1 for on page 14 further information.
Factory-Installed Jumper (Pins 15 & 17) - Factory-installed jumper. DO NOT remove!
Remote Activity LED (RLED) - These pins provide a remote LED device activity indicator (Pin 13=Cathode, Pin 14=Anode).
- **Factory Reserved Pins** - These pins are reserved for factory use only - Do not install jumper under any circumstances!
- **Activity Indicator** - Pin 13 is used for host connection (cable not included) to the Activity Indicator (Figures 3A & 3B). Some SATA drives/host controllers provide support for the Activity Indicator feature (refer to the SATA drive/host controller manufacturer's documentation for further information).

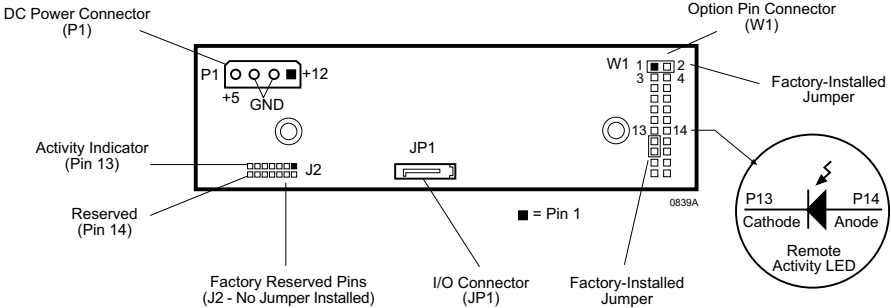


Figure 5: "Universal" Receiving Frame Motherboard (Rear View)

INSTALLATION

NOTES: Existing Parallel ATA DE110 carriers and new Serial ATA DE110 carriers will both work in Serial ATA "universal" receiving frames. "Universal" receiving frames are indicated by their BLUE LED. Existing DE110 carriers are indicated by a Data Express Logo, while the new Serial ATA DE110 carriers are indicated by the Serial ATA logo.

SATA DE110 carriers will *only* work in SATA DE110 "universal" receiving frames (indicated by their BLUE LED). Existing PATA DE110 receiving frames are indicated by their GREEN LED.

For SATA (1.5Gbps) operation, a SATA controller and appropriate SATA cable are required.

Preparation

NOTE: A #2 Phillips screwdriver will be required during this procedure.

While performing the steps in this section, work on a soft surface to prevent excessive shock to the drive being installed. Also refer to the manufacturer's documentation provided with the drive.

1. Remove the drive from its protective packaging.
2. **Plastic Drive Bezel:** If the drive came equipped with a plastic front bezel, it must be removed before installing the drive into the drive carrier.

Installing the Drive into the Carrier

1. Carefully insert the drive into the carrier. Slide the drive towards the Drive Carrier Board, so that the I/O connector on the drive mates with the connector on the Drive Carrier Board (Figure 6). Turn the drive/carrier assembly over.
2. Fasten the drive into place with four (4) #6-32 Phillips Flat Hd. screws (Figure 6). Some drives may require minor adjustment before securing into carrier with screws.

If drive supports the Activity Indicator feature, connect one end of the Activity Indicator Cable (provided) to the drive and the other end to JP1 located on Drive Carrier Board (Figures 4 & 6).

NOTE: Some SATA drives/host controllers provide support for the Activity Indicator feature (refer to the SATA drive/host controller manufacturer's documentation for further information).

3. Install the provided drive cover (Figure 7).

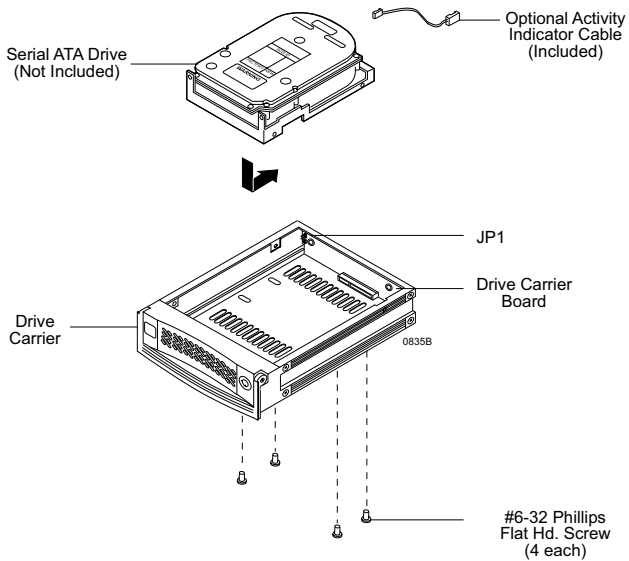


Figure 6: Drive Installation Assembly

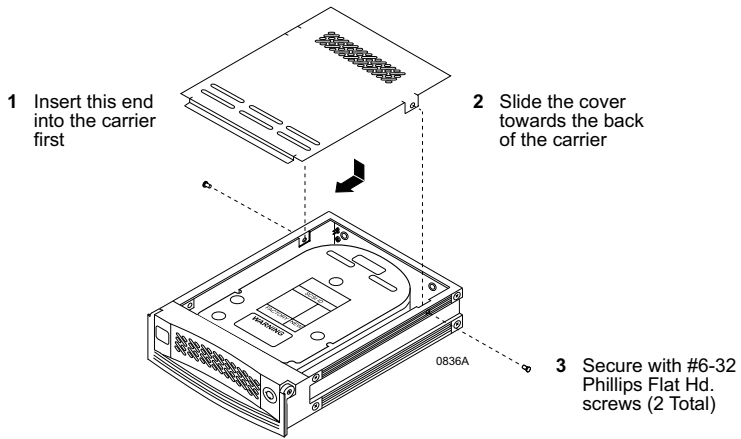


Figure 7: Drive Cover Installation

Installing the “Universal” Receiving Frame

The drive should be installed into the carrier before installing the “universal” receiving frame into the mounting bay of a computer or expansion chassis.

NOTE: Use a #2 Phillips screwdriver for this procedure.

1. Turn OFF power to the computer.
2. Open the computer system according to the manufacturer’s instructions. If necessary, temporarily remove any expansion boards that may make installation difficult.
3. With the drive carrier locked in place inside the receiving frame, install the SATA DE110 into the 5.25” drive opening in the computer or expansion chassis. Use the appropriate guides to position the Data Express, and fasten it into place with the four (4) #6-32 Phillips screws provided. Figure 8A illustrates the location of the mounting holes. Mounting holes are provided on each side and the bottom of the receiving frame to accommodate a variety of mounting configurations. Use the mounting holes which best suit the computer or expansion chassis configuration. Note that bottom mounting holes require self-tapping screws (not provided).
4. Adjust the front of the receiving frame so the carrier slides freely in and out on the receiving frame guides. The position of adjoining peripheral units may require adjustment.

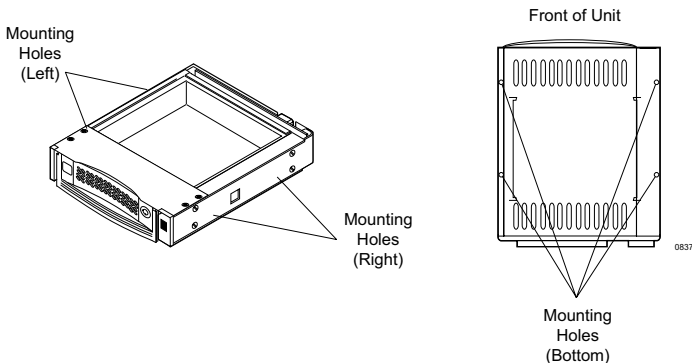


Figure 8A: Receiving Frame Mounting Holes

Spacer Plates (Optional)

The SATA DE110 is designed to fit most computer systems with standard 5.25" peripheral slots. The installation of the spacer plates (provided) may or may not be necessary.

NOTE: Depending on the computer system, spacer plates may be positioned on the receiving frame to utilize either top or bottom row of side-mounting holes (Figure 8B).

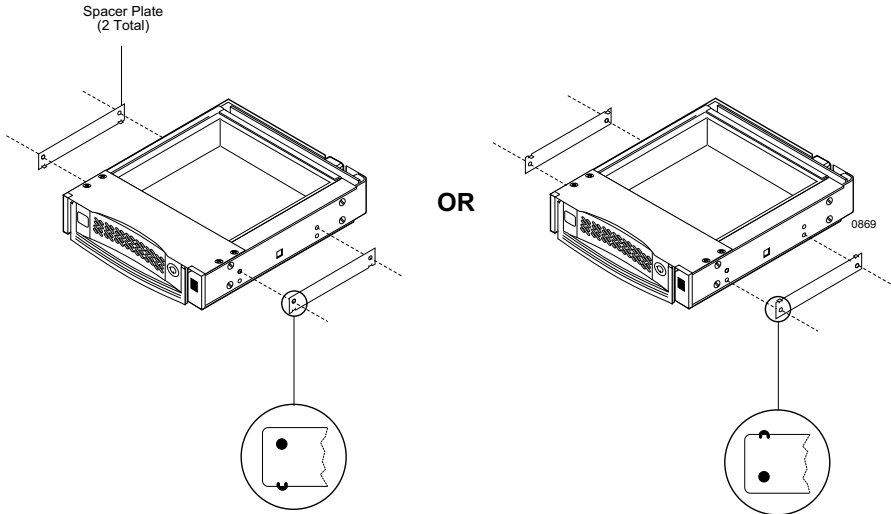


Figure 8B: Spacer Plate Installation (Optional)

5. Connect the I/O cable from the host adapter to the receiving frame. The Pin 1 indicator on the cable must be properly aligned.
6. Connect the power cable from the DC power supply in the computer or expansion chassis to the power connector on the SATA DE110 "universal" receiving frame. Refer to Figure 5 for the SATA DE110 "universal" receiving frame power connector location.
7. Replace any expansion boards that may have been removed earlier. Replace the system cover according to the manufacturer's instructions.

8. Reconnect any system or peripheral cables removed earlier.
9. Turn ON power to the computer. If the installation has been successful, and all the cables have been properly attached, the system should boot normally. Although the computer may not recognize the SATA DE110 yet, the front panel display on the SATA DE110 receiving frame should illuminate.
10. The new drive may need to be formatted or initialized prior to use with the operating system and applications software. Refer to the drive and/or computer manufacturer's documentation for formatting information.

Selecting the Unit ID Number

1. Verify that power is turned ON to the SATA DE110 "universal" receiving frame by turning on your computer. A number will appear in the unit ID display window if the carrier is locked in place.
2. Unlock the SATA DE110 drive carrier and remove it from the receiving frame. A "u" will be displayed initially when the unit is unlocked but will return to a number when the carrier is removed from the receiving frame.

WARNING: Unlocking the carrier unit switches DC power OFF to the drive. Since disk drives require a short amount of time to spin down, allow about 15 seconds before pulling the carrier unit out of the receiving frame to avoid possible damage to the drive.

3. Use the alignment tool supplied with the SATA DE110 to select the ID number of the disk drive. Refer to Figure 9 for the location of the ID Select Switch inside the receiving frame.

NOTE: The unit ID number display is for ID display purposes only.

4. After you have selected an appropriate unit ID number, replace the SATA DE110 carrier in the receiving frame, and **LOCK IT IN PLACE**.

NOTE: The lock on the SATA DE110 carrier functions as a lock and a DC power switch for the carrier unit. The lock must be engaged in order to supply power to the carrier and installed drive.

5. Reboot the computer. The new disk is now ready for use, although it may have to be formatted or initialized prior to use with your operating system and applications software.

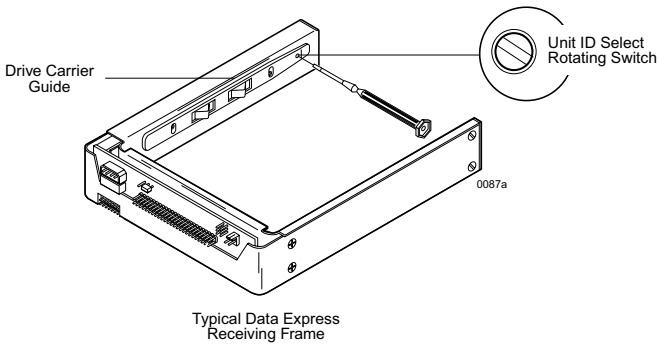


Figure 9: Unit ID Select Switch Location

Unit ID Select Switch Settings

The following table lists the Unit ID Select Switch settings and the valid AT/IDE unit numbers. Please note that all invalid switch settings have X's through them and result in a blank display in the receiving frame display window.

Table 1: Unit ID Select Switch Settings

Unit Select Position	0	1	2	3	4	5	6	7	8	9
Parallel/Serial ATA Drive	X	1	2	X	X	3	4	X	X	X
LED Number Display	Blank	0	2*	Blank	Blank	1	3*	Blank	Blank	Blank
W1 Jumper Position	X	Pins 1 & 2		X		Pins 3 & 4		X		

* Unit ID Select Switch must be rotated by alignment tool.

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NOTE: The unit ID number display is for ID display purposes only.

APPENDICES

Appendix A - Specifications/Dimensions

Specifications and dimensions below are for reference only.

Environmental Specifications	Operating	Storage
Ambient Temperature	0° C to 50° C	-40° C to 70° C
Relative Humidity ⁽¹⁾	10% to 80%	10% to 90%
Altitude	-1000 to 10,000 ft	-1000 to 40,000 ft
	-305m to 3048m	-305m to 12195m
Shock ⁽²⁾	10g	60g

⁽¹⁾ Non-condensing with maximum gradient of 10% per hour.

⁽²⁾ 11 msec pulse width 1/2 sine wave.

Physical Specifications	Carrier	Receiving Frame
Height	1.52" (38.6mm)	1.61" (40.9mm)
Width	4.73" (120.1mm)	5.81" (147.6mm)
Depth	7.94" (201.7mm)	8.61" (218.7mm)
Weight	1.3lb (0.59kg)	1.4lb (0.64kg) ⁽¹⁾

⁽¹⁾ With carrier removed.

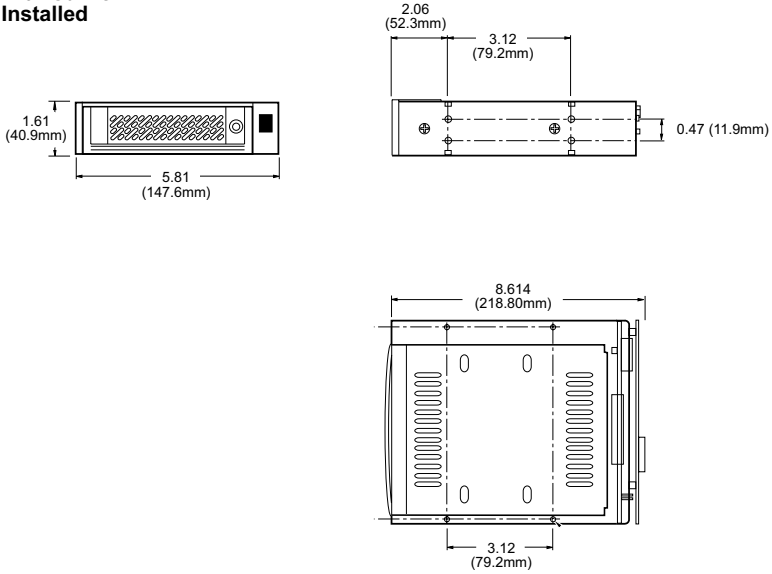
Chassis Reliability/Maintainability	
MTBF	500,000 Hours
MTTR	5 minutes
Preventive Maintenance	None

Electrical Specifications		
Input	+5V	65mA
	+12V	400µA

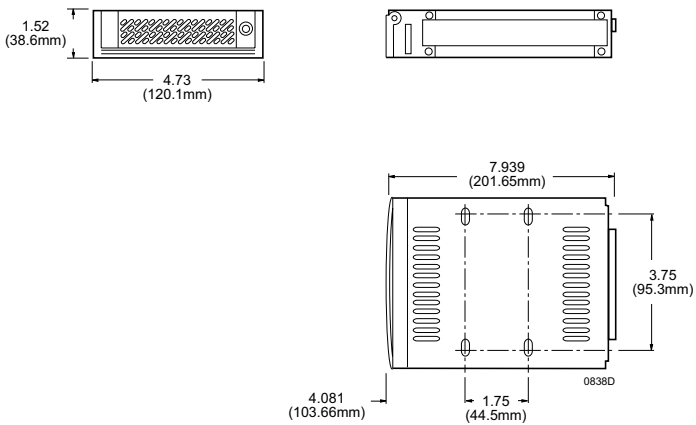
0832B

Insertion Rating
35,000

**Receiving Frame
with Carrier
Installed**



**Carrier
Only**



*Figure A-1: SATA DE110 Physical Dimensions
(Dimensions are for reference only)*

Appendix B - Optional Accessories

Carrying Case



Figure B-1: Carrying Case

The optional molded plastic carrying case is designed to transport one (1) DE110 carrier from one site to another in a safe, impact and moisture-resistant environment. Its compact dimensions, 10" long x 11" wide x 4.5" high, make it easy to carry and to store. The foam lining is contoured to fit a single Data Express carrier. Contact your StorCase dealer for further details and ordering information.

Reader's Comments

Please take a few moments when your computer system is up and running to send us your ideas and suggestions for improving our products and documentation. Did the installation go smoothly for you? Are there any changes you would like us to make, either with the hardware itself, or with the installation instructions? Everyone at StorCase Technology is working toward the goal of providing you with the highest quality, most cost effective, products available on the market, and we need your comments to guide our efforts. We look forward to hearing from you soon!

Date: _____

Your Name: _____

Address: _____

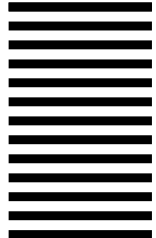
Telephone: () _____

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